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Task Work Plan
New England Resins & Pigments
Woburn, Massachusetts

CERCLIS No. MAD055988927
TDD No. 97-01-0034
Work Order No. 11098-021-001-2097-30

TASK SUMMARY

DATE OF TASK

On-site reconnaissance - 4 March 1997
Sampling - Week of 15 September 1997

EPA Region I Contact: Ms. Nancy Smith
State Contact: Mr. Harish Panchal (MA DEP, Boston)
Nearest Phone: START Mobile No. 3

Phone No. (617) 573-9697
Phone No. (617) 566-1118
Phone No. (617) 543-4781

*Approved
9-8-97*

1.0 SITE DESCRIPTION

1.1 Location

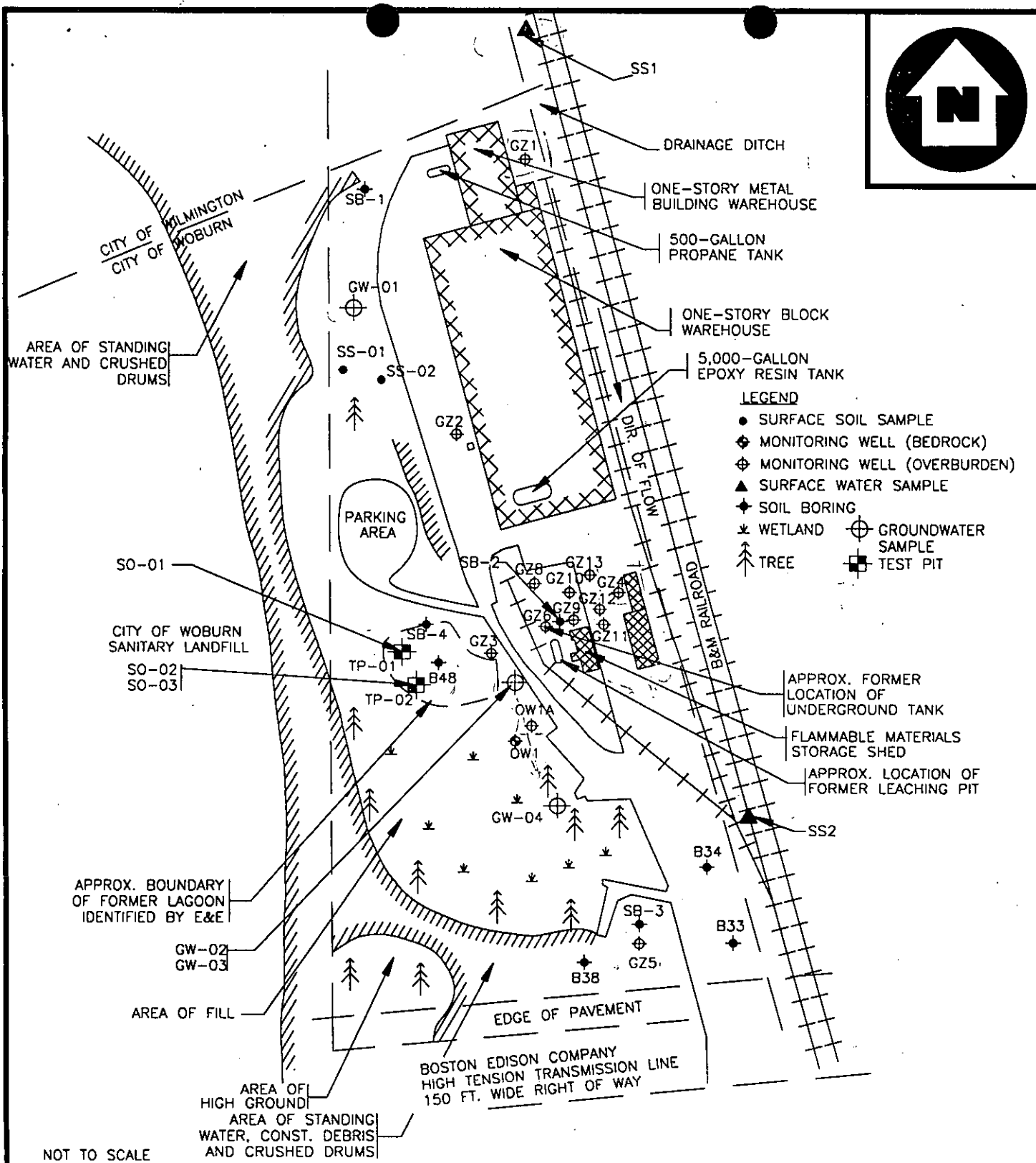
The New England Resins & Pigments property is located on New Boston Street in Woburn, Middlesex County, Massachusetts (Figure 1). To reach the property from Burlington, Massachusetts, travel north on Route 128 to exit 35 (Route 38). Take Route 38 north and make a right onto School Street. At the first stop sign, continue straight onto Merrimac Street and follow it to the end. Make a left onto New Boston Street. Property is on the left.

1.2 Site Description

The primary activity of New England Resins & Pigments is the storage of pigments, resins, and other bagged and drummed materials which are brought onto the property by rail cars. The bagged materials include iron and titanium oxides, organic pigments, limestone, talc, calcium carbonate, and cabosil. These activities have been performed at the facility since the mid-1960s. One large warehouse and two smaller buildings are located on the property. The warehouse is used to store the greater part of the materials handled by New England Resins & Pigments. The westernmost smaller building is used as a flammable materials storage shed. The easternmost smaller building is used for the storage of archived records (Figure 2).

Surface water drainage from the property flows into a drainage ditch located along the eastern boundary of the property, along the Boston & Maine railroad tracks. The drainage ditch, which appears to be a permanent water body, discharges to Halls Brook approximately 3,000 feet to the south of the property. Halls Brook in turn discharges in a southerly direction to the Aberjona River approximately 2 miles southeast of the property.

Approximately 60% of the property is covered by asphalt or buildings. The other areas of the property showed no signs of stained soils or stressed vegetation.



PROPOSED SAMPLING LOCATIONS

NEW ENGLAND RESINS & PIGMENTS
316 NEW BOSTON STREET
WOBURN, MASSACHUSETTS

HWRE

Civil•Environmental•Hydrologic•Structural•Environmental•Hazardous Waste Engineering

REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #
97-01-0034

DRAWN BY:
M.H.

DATE
8/10/97

FILE NAME:
HW-142/PROPOSED

FIGURE 2

A 5,000-gallon aboveground storage tank (AST) containing epoxy resins is located in the southwestern corner of the warehouse. An underground storage tank (UST) containing gasoline was formerly located just north of the flammable materials storage shed. It was removed in 1983.

A former wastewater lagoon is located on the western portion of the property. It was believed to have been used by a succession of fertilizer factories that occupied the property prior to New England Resins & Pigments. The lagoon had been filled by the time New England Resins & Pigments occupied the property. It is likely that nitrates as well as other chemicals were dumped into it during the 30-plus years of the lagoon's existence.

The nearest private well is estimated to be located within 0.5-radial miles of the property. The nearest public drinking water well is the Wilmington Water Department's Main Street well, located approximately 0.6 miles northeast of the property. The nearest residence is located on Virginia Avenue approximately 2,000 feet southwest of the property. There is no fence surrounding the property.

1.3 Operational and Regulatory History and Waste Characteristics

Since the mid-1960s, the primary activity of this facility has been the storage of pigments, resins, and other bagged and drummed materials which are brought onto the property by rail cars. The bagged materials include iron and titanium oxides, organic pigments, limestone, talc, calcium carbonate, and cabosil. Approximately 200,000 pounds of epoxy resins, stored in 55-gallon drums, are located in the warehouse. Conspicuously leaking drums are refused during delivery. The packaged and drummed materials remain unopened and are stored in the warehouse until they are distributed by New England Resins & Pigments to their customers throughout the New England area. The majority of the materials stored on the property are non-hazardous.

The New England Resins & Pigments property and the property to the east have been occupied by a number of different businesses including chemical and fertilizer factories during the past 100 years. The Merrimac Chemical Company occupied the property from 1853 to 1929. Other chemical manufacturers occupied the property and surrounding area from 1929 through 1963. At least one of these companies maintained a waste or storage lagoon at the rear of the property. The lagoon is evident in aerial photographs taken in 1938, 1954, and 1966. The lagoon has been completely covered with fill consisting of sand, gravel, boulders, and building rubble. It is presently used as open space and a parking and/or storage area.

In April 1983, Stauffer Chemical Company (Stauffer) performed an extensive hydrogeologic assessment of the Industriplex-128 Site, located south of the New England Resins & Pigments property. As part of this investigation, six soil borings were advanced on New England Resins & Pigments property, two of which were completed as monitoring wells (OW-1 and OW-1A). Boring OW-1 encountered the top of bedrock at approximately 19 feet and then was advanced through the rock to a depth of approximately 108 feet. The remaining borings were terminated in overburden deposits at depths of approximately 7.5 to 12.5 feet. Soil samples were collected from the borings and analyzed by Stauffer for priority pollutant metals; the samples were also field screened for volatile organic compounds (VOCs) using a portable gas chromatograph. Analytical results did not indicate heavy metals concentrations above "normal background levels." Field screening results for one of the soil samples (not specified) exhibited a concentration of total VOCs above background levels. However, this sample was never sent for laboratory analysis, so the

identity and concentration of the VOCs in the sample is not known.

Groundwater samples were collected from both on-site wells and analyzed by Stauffer for metals, cyanide, pH, and conductivity. The Stauffer report did not indicate whether or not the samples analyzed for metals had been filtered. Analytical results indicated pH and conductivity within the normal range for developed areas of New England. Cyanide was not detected in either sample. Cadmium and zinc were detected at concentrations below applicable drinking water standards. Nickel was present in well OW-1A at a concentration of 100 parts per billion (ppb); the secondary drinking water standard for nickel is 13.4 ppb. Two extractable organic compounds, bis(pentafluorophenyl)phosphine and bis(2-ethylhexyl)phthalate, were detected in well OW-1A at concentrations of 31 and 14 ppb, respectively. No water quality standards are available for these compounds. As a result of this investigation, Stauffer did not identify the New England Resins & Pigments property as containing significant levels of contaminants related to the Industriplex-128 Site.

In 1986, Goldberg-Zoino and Associates, Inc. (GZA) conducted a Site Investigation of the New England Resins & Pigments property. Five soil borings were advanced on the property, four of which were completed as overburden monitoring wells (GZ-1 to GZ-5; refusal occurred at 3.5 feet in GZ-2, therefore, a well was not installed). One of the wells, GZ-3, was located in the area of the former lagoon. The results of GZA's screening of soil samples did not indicate the presence of VOCs above background levels. VOCs were not detected in groundwater during this study except for a trace concentration of methane in well GZ-1. GZA also collected two surface water samples from the drainage ditch which flows along most of the eastern border of the property, one upstream of the property (SS-1) and one downstream (SS-2). Several VOCs were detected in sample SS-1 which appear to be from an off-site source, as the sample was collected upstream of the New England Resins & Pigments buildings and work areas.

In August 1991, ATEC, Inc. advanced four soil borings on the New England Resins & Pigments property (SB-1 to SB-4). No monitoring wells were installed and no groundwater samples were collected or analyzed. Soil samples were analyzed for Toxicity Characteristic Leachate Procedure (TCLP) metals, VOCs, and total petroleum hydrocarbons (TPHs). TCLP metals were not detected in any samples. The soil sample collected from SB-4 contained 46.2 parts per million (ppm) TPHs. At location SB-2, in the area of the former gasoline UST, TPHs at a concentration of 845 ppm were reported. Analysis of the same sample for VOCs indicated the presence of ethylbenzene and total xylenes at concentrations of 15,000 and 460,000 ppb, respectively. Methylene chloride and acetone were detected at relatively low concentrations in samples SB-1, SB-3, and SB-4, and 2-butanone was reported in sample SB-4 at a concentration of 41 ppb.

In September 1991, GZA conducted additional sampling and analysis of the New England Resins & Pigments property. Eight additional soil borings were advanced in the area of the former gasoline UST which was reported to have been removed in 1983 (GZ-6 to GZ-13). Six of the borings were completed as overburden monitoring wells (GZ-6, GZ-8, and GZ-10 to GZ-13). Gasoline constituents were detected in soil and groundwater samples collected by GZA from locations at and downgradient of the former gasoline UST. However, the maximum concentrations encountered in soil samples collected by GZA were several orders of magnitude

lower than those reported by ATEC, Inc. Concentrations of gasoline constituents in groundwater samples analyzed by GZA were below available standards for public drinking water supplies.

Benzene
In May 1994, GZA resampled their eight existing wells on the property (wells GZ-1 and GZ-8 were destroyed during property renovations). The analytical results of groundwater samples collected indicate the presence of low concentrations of VOCs, which are common constituents of gasoline, in the area of the former UST. No evidence of floating (separate phase) petroleum product was observed on the groundwater from any of the monitoring wells at the site.

Six Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) and one National Priority List (NPL) properties are located within 1-radial mile of the New England Resins & Pigments property. There are six Resource Conservation and Recovery Act (RCRA) hazardous waste generators located within 1-radial mile of the property.

2.0 PREVIOUS WORK AT THE SITE

- *E&E/FIT Preliminary Assessment, 6 August 1980.*
- *E&E/FIT Site Inspection, 28 August 1980.*
- *Stauffer Chemical Company Hydrogeologic Assessment of Industriplex-128, April 1983.*
- *GZA Environmental Site Assessment, 24 June 1986.*
- *ATEC, Inc. Subsurface Soil Investigation, August 1991.*
- *GZA Additional Sampling and Analysis, 17 September 1991.*
- *GZA Environmental Site Evaluation Update, 10 August 1994.*
- *Roy F. Weston, Inc. (WESTON) Superfund Technical Assessment and Response Team (START) On-site Reconnaissance, 4 March 1997.*

3.0 TRIP OBJECTIVE

The objectives of the proposed Site Inspection Prioritization (SIP) sampling are to collect appropriate analytical data to confirm or identify hazardous substances at the property and investigate whether the substances have impacted human health and the environment. To date, a file review has been completed and an on-site reconnaissance of the property was performed by START personnel on 4 March 1997. START personnel attempted to collect groundwater samples from existing on-site monitoring wells on 8 July 1997, but were unable to obtain sufficient volume from the wells that were located.

Based on existing historical information, visual observations made during the on-site reconnaissance, and an evaluation of data gaps such as whether or not the former wastewater lagoon on the property contains any potentially hazardous materials, this proposed plan calls for

sampling of the former wastewater lagoon, soil, and groundwater on the property to determine if hazardous materials are being released from the former wastewater lagoon.

4.0 PERSONNEL

Name

Role

Scott Rose	Site Leader, Sampler 1
Joseph Schmidl	Site Health and Safety Coordinator, Sampler 2
Jaya Kamath or Paul Schrot	Sampler 3
Subcontractor Personnel	Backhoe Operator

5.0 TECHNICAL APPROACH

5.1 On-site Reconnaissance

An on-site reconnaissance was conducted at the property on 4 March 1997, during which START personnel interviewed the facility's owner, inspected the building interior and surrounding areas for potential source areas, and conducted a walk-through of the property. The On-site Reconnaissance Checklist (Table 1) was used during the reconnaissance. Potential sampling locations were not marked during the on-site reconnaissance. Proposed locations are shown on Figure 2.

5.2 Sampling

1. The field team will establish a command post upwind of suspected source areas, if possible.
2. The Site Health and Safety Coordinator (SHSC) will perform a calibration check of monitoring instruments.
3. The samplers will collect samples while the Site Leader documents activities in the logbook, completes Contract Laboratory Program (CLP) forms, and assists with decontamination of the sampling equipment between sampling locations.

This Task Work Plan proposes the collection of three source samples from two locations, three soil samples from two locations, and four groundwater samples from three locations (Table 2). Additional on-site visual observations and field screening methods may also necessitate additional sampling. After sampling locations have been identified, START will measure the distance and direction of the selected sampling locations to the nearest fixed reference point on site.

5.2.1 Source Sampling

Source sampling is proposed from two test pits that will be excavated on the property. Test pits TP-01 and TP-02 will be excavated in the area of the former wastewater lagoon in order to determine whether or not any hazardous substances exist in this area. SO-01 will be collected from TP-01. SO-02 and SO-03 will be collected from TP-02, which will be located adjacent to TP-01. Due to the depth of the test pit excavations and the potential instability of the excavation

walls, the samples will be collected either from the bucket of the backhoe or by extending a hand auger into the excavation.

Source samples will be analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), total metals, and cyanide.

Table 1

On-Site Reconnaissance Checklist

1. Verify location of property on a U.S. Geological Survey topographic map.
2. Monitor ambient air in accordance with the Site Health and Safety Plan.
3. Draw a site sketch of the property.
4. Determine the approximate physical dimensions of any on-site sources (length, width, height, depth).
5. Note the quantity, contents (if labeled), and condition of any source areas.
6. Note any containment features which would prevent migration from sources to air, groundwater, and surface water.
7. Determine whether there are any barriers limiting access to the source areas of contamination.
8. Determine the distance to the closest regularly occupied building, as measured from any on-site source which might emit contaminants to the air.
9. Determine the number of residences, schools, and day-care facilities located within 200 feet of source areas.
10. Locate and note the condition of all on-site monitoring wells (if applicable).
11. Look for evidence of surface soil contamination, such as stained soil or leachate outbreaks.
12. Note any stressed vegetation.
13. Determine overland path to the surface water.
14. Identify, measure, and flag sample locations based on site conditions.
15. Determine the number of on-site employees.
16. Determine the location of the nearest private well.
17. Note all processes that have occurred on site.
18. Note all chemicals used in processes.
19. Note other off-site potential sources of contamination.

Source samples will be homogenized in a stainless steel bowl before being transferred to sample containers. The sample fraction collected for VOC analysis will be collected first and will not be homogenized.

Source samples will be homogenized in a stainless steel bowl before being transferred to sample containers. The sample fraction collected for VOC analysis will be collected first and will not be homogenized.

Soil sampling is proposed from two locations to be determined in the field. SS-01 and SS-02 will be collected upgradient of the former wastewater lagoon and will be used as references for the source samples.

Sample SS-01 will be analyzed for metals only. Sample SS-02 will be analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), total metals, and cyanide. Soil samples will be collected with a stainless steel hand auger or trowel at a depth no more than 2 feet. Soil samples will be homogenized in a stainless steel bowl before being transferred to sample containers. The sample fraction collected for VOC analysis will be collected first and will not be homogenized.

Table 2

Sample Rationale

MATRIX: Source/Soil	
SO-01	Grab sample collected from TP-01, depth to be determined in field. (Matrix Spike/Matrix Spike Duplicate)
SO-02	Grab sample collected from TP-02, depth to be determined in field.
SO-03	Duplicate sample of SO-02 collected for quality control.
SS-01	Grab sample collected upgradient of former wastewater lagoon, depth \leq 2 feet as a reference sample, for metals analysis only.
SS-02	Grab sample collected upgradient of former wastewater lagoon, depth \leq 2 feet as a reference sample.
MATRIX: Aqueous	
GW-01	Grab sample collected upgradient of the former wastewater lagoon to establish reference concentrations for local groundwater.
GW-02	Grab sample collected adjacent to the former wastewater lagoon to establish potential impact on groundwater.
GW-03	Duplicate sample of GW-02 collected for quality control.
GW-04	Grab sample collected downgradient of the former wastewater lagoon to establish potential impact on groundwater. (Matrix Spike/Matrix Spike Duplicate)
TB-01	Trip blank sample, collected for quality control.
RB-01	Groundwater sample equipment rinsate blank sample collected for quality control.
RB-02	Source/soil sample equipment rinsate blank sample collected for quality control.

Table 2**Sample Rationale (Concluded)**

MATRIX: Performance Evaluation (PE)	
PE-01	PE sample for low/med concentration VOC analysis in water.
PE-02	PE sample for SVOCs in water.
PE-03	PE sample for pesticides/PCBs in water.
PE-04	PE sample for Aroclor-1254 in soil.
PE-05	PE sample for metals in water.
PE-06	PE sample for metals in soil.
PE-07	PE sample for cyanides in water.

5.2.2 Groundwater Pathway

Groundwater sampling is proposed from three locations to be determined in the field. GW-01 will be collected upgradient of the former wastewater lagoon and will be used as a reference sample. GW-02 and GW-03 will be collected adjacent to the former wastewater lagoon to confirm the presence of any substances migrating from the former wastewater lagoon via groundwater. GW-04 will be collected downgradient of the former wastewater lagoon to confirm the presence of any substances migrating from the former wastewater lagoon via groundwater.

Four groundwater samples, including one duplicate sample, are proposed to be collected from three locations using a hydraulically-powered groundwater sampling device. START personnel will advance a screened wellpoint to the water table at each location. The water table depth will be determined at the first location prior to driving the wellpoint by conducting continuous soil sampling using the hydraulically-powered groundwater sampling device. The soil boring will be logged for future reference.

Groundwater samples will be analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), pesticides/polychlorinated biphenyls (PCBs), total metals, and cyanide. VOC samples will be collected first, followed by SVOCs, pesticides/PCBs, metals, and cyanide. Groundwater samples will be collected using dedicated or decontaminated sampling equipment to minimize cross-contamination. Sample container requirements are summarized in Table 3.

5.2.3 Surface Water Pathway

No surface water samples are proposed to be collected as part of the sampling event.

5.2.4 Soil Exposure

Soil samples SS-01 and SS-02 will be collected upgradient of the former wastewater lagoon and will be used as references for the source samples.

5.2.5 Air Pathway

No air sampling will be performed as part of the SIP.

5.2.6 Quality Assurance and Analysis

Two rinsate blanks will be collected from the sampling equipment as quality control for sample collection procedures. One trip blank sample for each cooler containing VOC samples will be analyzed for VOCs only as a quality control for shipping and handling procedures. Extra volume for one matrix spike/matrix spike duplicate will be included for each media sampled as a quality control of laboratory analytical procedures. One duplicate sample will be collected for each matrix sampled and each collection technique employed. Performance evaluation (PE) samples for each analysis in each available media will also be included for analytical quality control.

Samples will be analyzed for VOCs, SVOCs, pesticide/PCBs, total metals, and cyanide. The trip blank will be analyzed for VOCs only. VOC samples will be collected first, followed by SVOCs, pesticide/PCBs, metals, and cyanide. Dedicated or decontaminated sample collection equipment will be used at each sample location to minimize cross-contamination. The samples will be sent by courier or hand-delivered to a predesignated laboratory. Container requirements are outlined in Table 3.

Table 3

Sample Analysis/Bottle Type/Preservation

Location	Sample Bottles	Analysis	Preservation
MATRIX: Source/Soil			
SO-01	2 × 40-mL vials 2 × 8-oz glass jar 1 × 4-oz amber jar 1 × 4-oz amber jar	VOCs SVOCs, Pest/PCBs Total Metals Cyanide	Ice Ice Ice Ice
SO-02	2 × 40-mL vials 1 × 8-oz glass jar 1 × 4-oz amber jar 1 × 4-oz amber jar	VOCs SVOCs, Pest/PCBs Total Metals Cyanide	Ice Ice Ice Ice
SO-03	2 × 40-mL vials 1 × 8-oz glass jar 1 × 4-oz amber jar 1 × 4-oz amber jar	VOCs SVOCs, Pest/PCBs Total Metals Cyanide	Ice Ice Ice Ice
SS-01	1 × 4-oz amber jar	Total Metals	Ice

Table 3

Sample Analysis/Bottle Type/Preservation (Continued)

Location	Sample Bottles	Analysis	Preservation
SS-02	2 × 40-mL vials 1 × 8-oz glass jar 1 × 4-oz amber jar 1 × 4-oz amber jar	VOCs SVOCs, Pest/PCBs Total Metals Cyanide	Ice Ice Ice Ice
MATRIX: Aqueous			
GW-01	2 × 40-mL vials* 4 × 1-liter amber jars 1 × 1-liter poly bottle 1 × 1-liter poly bottle	VOCs SVOCs, Pest/PCBs Total Metals Cyanide	HCL, pH < 2, Ice Ice HNO ₃ , pH < 2, Ice NaOH, pH > 12, foil wrap, Ice
GW-02	2 × 40-mL vials* 4 × 1-liter amber jars 1 × 1-liter poly bottle 1 × 1-liter poly bottle	VOCs SVOCs, Pest/PCBs Total Metals Cyanide	HCL, pH < 2, Ice Ice HNO ₃ , pH < 2, Ice NaOH, pH > 12, foil wrap, Ice
GW-03	2 × 40-mL vials* 4 × 1-liter amber jars 1 × 1-liter poly bottle 1 × 1-liter poly bottle	VOCs SVOCs, Pest/PCBs Total Metals Cyanide	HCL, pH < 2, Ice Ice HNO ₃ , pH < 2, Ice NaOH, pH > 12, foil wrap, Ice
GW-04	6 × 40-mL vials* 12 × 1-liter amber jars 2 × 1-liter poly bottle 2 × 1-liter poly bottle	VOCs SVOCs, Pest/PCBs Total Metals Cyanide	HCL, pH < 2, Ice Ice HNO ₃ , pH < 2, Ice NaOH, pH > 12, foil wrap, Ice
TB-01	2 × 40-mL vials*	VOCs	HCL, pH < 2, Ice
RB-01	2 × 40-mL vials* 4 × 1-liter amber jars 1 × 1-liter poly bottle 1 × 1-liter poly bottle	VOCs SVOCs, Pest/PCBs Total Metals Cyanide	HCL, pH < 2, Ice Ice HNO ₃ , pH < 2, Ice NaOH, pH > 12, foil wrap, Ice
RB-02	2 × 40-mL vials* 4 × 1-liter amber jars 1 × 1-liter poly bottle 1 × 1-liter poly bottle	VOCs SVOCs, Pest/PCBs Total Metals Cyanide	HCL, pH < 2, Ice Ice HNO ₃ , pH < 2, Ice NaOH, pH > 12, foil wrap, Ice

*Sample bottles will be pre-preserved with 5 to 7 drops of HCl.

mL = Milliliter.

oz = Ounce.

Pest/PCBs = Pesticide/Polychlorinated biphenyl.

SVOCs = Semivolatile organic compounds.

VOCs = Volatile organic compounds.

6.0 PROCEDURE

Activities will be conducted in accordance with the site-specific health and safety plan (HASP) which will accompany the field team to the property, and applicable standard operating procedures (SOPs). Copies of the SOPs will also accompany the field team.

7.0 DECONTAMINATION

Decontamination will be conducted in accordance with the HASP and applicable SOPs, and will consist of a detergent wash and tap water rinse, rinsing with 10% nitric acid solution, a deionized water rinse, an isopropanol rinse, a final deionized water rinse, and air drying. Excavation equipment will be steam cleaned following its use to prevent cross contamination.

8.0 DOCUMENTATION

Photographs will be taken to document site conditions. The location and direction from which photographs are taken will be noted in the field logbook, in accordance with the scope of work. Field observations will be recorded in the logbook, including description of sampling locations and any deviations from the Task Work Plan. Chain-of-custody will be maintained until samples are relinquished to a courier or to the laboratory assigned to perform the analyses.

9.0 SAFETY CONSIDERATIONS

The buddy system, periodic air monitoring, and caution will be used throughout field activities, in order to ensure the safety of personnel during on- and off-property reconnaissance and sampling. The proposed tasks do not require confined space entry.